

L'exemplaire filmé fut reproduit grâce à la générosité de:

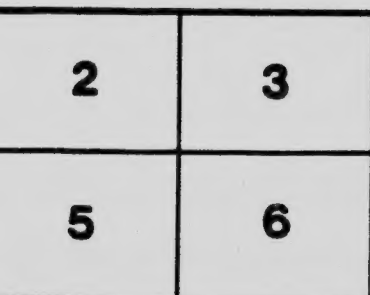
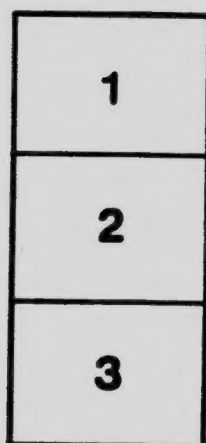
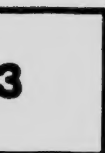
Vancouver City Archives

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole ➔ signifie "A SUIVRE", le symbole ▼ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

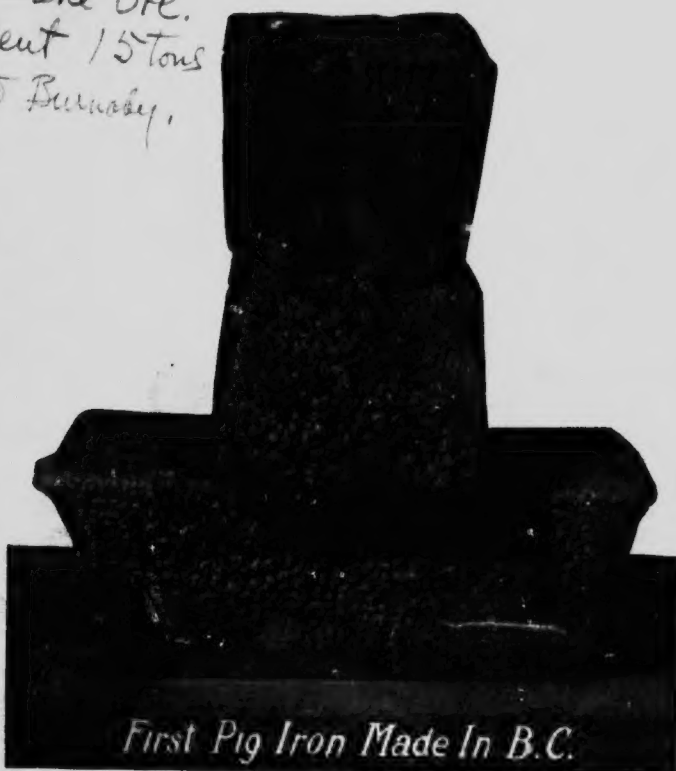


NW
338.74
V22

IRON AND STEEL INDUSTRY FOR GREATER VANCOUVER

Vancouver Magnetite (Fe_3O_4) Iron and Steel Smelting Company, Limited

Lake Ore.
Sent 15 tons
to Burnaby.



First Pig Iron Made In B.C.

The above high-grade No. grey pig-iron, entirely free from all sulphur by analysis, and produced solely from pure Texada Island, B.C., magnetite iron ores, was smelted by the above company in September, 1919, at the B. C. Electric Railway Company's Burnaby power house, being first fused in an electric furnace and then reduced by the duplex process.

This up-to-date furnace practice conforms with the very latest advancements in any skilled iron and steel metallurgy, thereby making absolutely obsolete for this province all ideas of treatment in antiquated blast furnaces, which necessitates additions of inferior soft ores, high in phosphorus. The fact that splendid magnetite iron ores in abundance occur along the actual seaboard of the islands and mainland, obviating the high cost of transportation of any ores from the interior plateau of this province, greatly cheapens all production of pig-iron locally, enabling this product to more than compete, both in quality and low costs, with any other of the world's iron centres.

Vancouver Magnetite (Fe_3O_4) Iron and Steel Smelting Company, Limited

Head Office: Vancouver, British Columbia, Canada

Authorized Capital \$100,000.00

Divided into 100,000 shares of one dollar (\$1.00) each. Of these, to September 10th instant, 76,300 shares have been already subscribed for and allotted, being paid for in full. It is now proposed by the company to increase this capital to \$200,000.00, to be used for completion of the smelting plant and accessories.

DIRECTORS

President

DR. T. S. HALL, M.D., New Westminster, B.C.

Directors

COLONEL F. C. McTAVISH, M.D., Vancouver, B.C.

ARCH. L. TEETZEL, of MacPherson & Teetzel, Wholesale Hardware, Vancouver, B.C.

ARCH. EDWARD WRIGHT, Civil Engineer, Trail, B.C.

J. B. HALL, of Hall Machine Works, Vancouver, B.C.

CAPTAIN ROBERT BAILEY, of Towing Company, Vancouver, B.C.

Managing Director

PERCY H. FRASER, Manufacturer, Vancouver, B.C.

Advisory Electrical Engineer

L. B. PHILPOT, of Philpot-MacDonald Co., Limited, Electrical Engineers, Vancouver, B.C., late of the Western Power Co. of Canada

Advisory Mining and Metallurgical Engineer

RONALD C. CAMPBELL-JOHNSTON, Vancouver, B.C.

Chemist

PERCY W. THOMAS, Analytical Chemist, Vancouver, B.C.

Solicitor

O. L. BANCROFT, Dawson Building, Vancouver, B.C.

Auditor

JOHN J. COWDEROY, 1173 Howe Street, Vancouver, B.C.

Bankers

THE STANDARD BANK OF CANADA

Secretary

Registered Office

210 Dawson Building, Vancouver, B.C.
Telephone Seymour 2306

OBJECTS

First—To manufacture pig-iron to build up British Columbia.

Second—To produce high-grade No. 1 grey pig-iron, which when offered to the trade will permit every kind of manufacture of steel.

Third—That it will be an employment to thousands of men and women.

Fourth—That will make Vancouver the iron centre on the Pacific Coast.

Fifth—That will help keep in Canada a part of the \$178,340,779 imports of iron and steel goods from foreign countries per annum.

Vancouver Magnetite (Fe_3O_4) Iron and Steel Smelting Company, Limited

Headquarters: Vancouver, British Columbia, Canada

IRON and steel, their smelting and manufacture, will force British Columbia, having the "Port of Predestination" to the whole Pacific Ocean, into the zenith of all great commercial prosperity and trade by sea and land. This queen of ports already reaches out for those great marts, culminating through Asia and the other continents, impinging along the boundless seaboard of that far-flung Pacific Ocean. This achievement in metallurgy makes this most western province of the Dominion of Canada the future prime producer of commercial grey pig-iron of the highest quality for every manufacture from steel, to be used both in home consumption as well as for export to all other countries.

THE FIRST PIG-IRON TO BE SMELTED IN BRITISH COLUMBIA

The following are some of the general details concerning the local pig-iron industry. As it is of vital importance for the welfare of this whole western province of British Columbia, and equally as much for the Dominion of Canada as a whole, to be intimately conversant with the following correct facts concerning the splendid quality of the high-class grey pig-iron, the first ever smelted within its boundaries from solely local magnetite iron ores alone, fluxed with its own limestone and melted with local charcoal in an electrical furnace, to begin by upsetting the chemical stability and extremely high melting-point temperature necessary for magnetite, namely, 2,780 degrees Fahrenheit, then a further and final slower reduction into actual pig-iron at a much lower temperature than in the first chemical reaction, at about 2,200 degrees Fahrenheit. In the Duplex process, the following thorough analysis of this brand of British Columbia pig-iron, carried out by Mr. F. W. Thomas, analytical chemist, of Vancouver, is now given, together with other authentic analyses, for careful comparison with the best brands of Nos. 1 and 2 grey pig-irons:

COMPARISON OF COMMERCIAL GREY PIG-IRON

	B. C. Per Cent.	British	
		No. 1 Per Cent.	No. 2 Per Cent.
Silica	3.43	2.00	1.76
Graphite carbon....	0.73	3.04	2.58
Combined carbon ..	1.07	0.70	1.18
Phosphorus	0.48	0.04	0.04
Sulphur	Absent	0.01	0.01
Metallic iron	94.13	93.80	94.30
Total determined ..	99.84	99.59	99.87

BRITISH COLUMBIAN IRON ORES

The quality of the magnetite iron ores from which the above local pig-iron was produced, by analysis by the provincial government, given as under:

Metallic iron	62.57 to 69.85 per cent.
Sulphur	0.403 to 0.60 per cent.
Phosphorus	0.024 to trace per cent.
Insolubles	6.64 to 2.75 per cent.
Titanium and other deleterious impurities absent.	

The above samples roughly represent generally the other magnetite deposits of this province, lying in abundance along the sinuous coast line of her fjords and many inlets, and so affording the easiest of access for assembly from the mines to any given central smelting site.

The prolonged mooted question of securing an adequate supply of hematite, limonite, bog, wad, or other inferior peroxide iron ores, to mix with the superior magnetites in order to reduce the mean average of the otherwise high melting-point temperature of the whole charge in the furnace, has now been absolutely eliminated, since these additional inferior peroxide iron ores are unnecessary in the Duplex process, as well as being not so low in phosphorus contents as are the purer magnetites of higher iron tenor, so that the mixture of any deleterious tonnage in the furnace charge has depreciated the splendid high quality of the local pig-iron, produced from magnetite iron ore alone.

By using electrical smelting, instead of an expensive installation of blast furnaces with their accessories of hot stoves to heat the blast, blowers and other necessary parts, the magnetites have been more quickly reduced into superior pig-iron with the simple addition of limestone flux and charcoal fuel, while by this process the sulphur present in the ores has been completely volatilized during the first fusing.

Today, throughout Europe and on this North American continent, the costly erections of the now out-of-date blast furnace process are rapidly being superseded by electrical smelting, while the costs of this latter system are decreasing total expenses incurred by at least five dollars (\$5.00) per ton of pig-iron produced.

THE HISTORY OF THE COMPANY

In March, 1917, the Vancouver Magnetite (Fe₃O₄) Iron & Steel Smelting Company, Limited, started experimenting on the iron ores of British Columbia at Ronaldsay, Howe Sound, with a firm belief that the iron ores of this province could be smelted with a suitable process and made into high-grade pig-iron. The company took over by lease, with option of purchasing, an old plant at Ronaldsay and started with the construction of, and operating with, a "Swansea" furnace, opening up an iron mine in the Lillooet district. The company was the first to ship 100 tons of iron ores over the Pacific Great Eastern Railway, then by barge to the plant at Ronaldsay.

WORKS AND SITE

The site on which the Ronaldsay works are situated was most carefully chosen on account of its many advantages. It carries at present an area of one mile square, comprising 640 acres, with one mile of waterfront, facing a fine deep-water bay, well protected at all tides from all winds.

Timber and water are abundant for domestic uses and general utility. This site was held by lease up

till 1919, with option to purchase at a remarkably low price, considering its many advantages and water power included. A large three-storey rock plant is built, having bins constructed to store a thousand tons of ore, with large Samson rock crusher (36-inch jaw) and a smaller Samson rock crusher (14-inch jaw). In connection also are elevating belts, trommels, hoisting machinery, fire protection system, and all the requisites, with the 5½-foot Pelton wheel (mentioned above) for power to run a complete plant, with wharf, blacksmith shop, offices, mess, bunk-houses (50 feet long), stable, storehouses and sufficient buildings for present use.

The furnace is built of common brick, lined with Clayburn fire brick. It is a good though small furnace of the Swansea type, constructed with a main smelting shaft, connected by an archway through the front wall with a fore-hearth. It carries a temporary iron stack, 36 feet high by 24 inches diameter, to be rebuilt permanently, connecting with a main stack to serve all units. The inside measurements of the main smelting shaft are: Walls, 7 feet high; feed door, 36 by 18 inches, 48 inches above smelting floor, built in back wall; an arch connecting with fore-hearth through the front wall, 14 inches at butt, 22 inches at the spring, and 48 inches wide, being 24 inches long through front wall of furnace shaft. Outside measurements: Built on a foundation going down 7 feet deep into the ground, the outside walls stand 13 feet high; sides, 6 feet wide; front and back, 8 feet across. The fore-hearth: Extra construction on front of main shaft measures, outside, 36 inches; sides, 24 inches thick, like those of furnace; front wall, 18 inches thick for 8-foot wide front. On the inside it is 18 inches wide, stretching from side to side, holding in this measurement a well for the molten metal, 12 inches wide and 12 inches deep and 48 inches long, containing four cubic feet in capacity. The whole furnace on the outside is well braced by railway iron and buckstays. There are many other technical details that could be mentioned, but all minutely described in my former detailed report. That description includes account of oil burners, apparatus and accessories, blast blowers, steam boiler, pipes and appliances, and all the items of a complete smelting plant.

Its duty during every twenty-four hours consists of the smelting of one hundred and twenty (120) long tons of total charge (when the alterations mentioned in my former report are completed), and carries 50 tons of iron ores, averaging 50 per cent. metallic iron and better, producing therefore twenty-five (25) tons of pig-iron per diem.—Ronald Campbell Campbell-Johnston, mining and metallurgical engineer.



Tug "Vigilant" bringing government ore from Terada Island, British Columbia, to this company's plant at Burnaby for test in electric furnace.

B. C. IRON ORE EXPERIMENTS TO START—TEN THOUSAND TONS WILL BE TAKEN FOR FURNACES HERE

Hon. Wm. Sloan, on the Floor of the House, Asking the Legislature for Authority to Secure Ore

Ample Supply Believed to be Available for Production of Pig-iron

One Plant Located on False Creek, the Other in H. Sound

(Province, March 14th)

As another step in the direction of encouraging the development of the magnetite iron deposits of British Columbia and the establishment of an iron and steel industry—those preceding having been the offer of a bounty on a pig-iron produced in the province, and the obtaining of a report from Dr. Alfred Stansfield, professor of metallurgy, McGill University, on the commercial feasibility of treating the iron ores of the province by means of electro-smelting—Hon. Mr. Sloan, Minister of Mines, is today asking the

British Columbia Legislature for authority to take from any of the iron properties of the province a quantity of ore, not to exceed 10,000 tons aggregate, for experimental uses. There are at present two small furnaces situated near Vancouver and owned by two distinct and enterprising companies, which are prepared to take advantage of the terms of this legislation. Brief reference to the proposal has already been made in The Province. The cost to the government will be \$50,000, it is stated.

Large Scale Expectations

From this it will be seen that both these companies are confident, or at least very optimistic, in regard to the practicability of treating the iron ores of British Columbia and producing merchantable pig-iron at a cost that will permit the meeting of local and perhaps outside market requirements. They claim they have the plants necessary for satisfactory experiment, and it is Mr. Sloan's intention to do what can be done to assist them in making the attempt.

If they are successful he thinks it not too extravagant to hope that from their small beginnings will spring industries which will exploit the iron ore resources of the province on a larger scale and eventually lead to the establishment in the Canadian Northwest of the network of allied industries which follow the production of iron and steel on a large scale. And Mr. Sloan makes it clear that any other companies prepared to undertake similar experiments in British Columbia also will be accorded every possible consideration.

In support of the efforts he is making to assist and encourage those who are disposed to enter into the utilization and the development of the iron ore deposits of the province, Mr. Sloan points to the history of the industry in Nova Scotia. From a little forge shop with a capital of \$4,000 and ten employees it had developed into a great Canadian industry, and one of the most notable industrial enterprises on the American continent. In view of this experience he thought that he was justified before the members of the legislature, and would be backed up by the country generally, in extending all assistance possible to companies which were prepared, no matter on how small a scale at the start, to demonstrate the practicability of producing high-grade pig-iron from the raw material now lying undeveloped in large quantities in British Columbia.

EXTRACTS FROM BULLETIN No. 2, 1910, BRITISH COLUMBIA DEPARTMENT OF MINES

As mentioned above, the development of electric reducing has been most marked during the last few years in Sweden. At present some fourteen high furnaces are in operation, and the total output represents about 140,000 tons of pig-iron per annum. This pig is of the highest quality that can be made, and it commands, therefore, high prices. It is mostly used in Sweden for producing high-grade steel, but a certain amount is also sold to the Sheffield market. There are, further, many more installations contemplated, and it is safe to say that wherever there is cheap water power the OLD BLAST FURNACE will be replaced by electric producers. I have thought for a long time that greater economy could be obtained by separating the two stages of the smelting process and carrying them out in separate furnaces.—Alfred Stansfield, D.Sc., A.R.S.M., F.R.S.C., Professor of

Metallurgy, McGill University, in his report to the Hon. Wm. Sloan, Minister of Mines, British Columbia.

Electric vs. Open Hearth Steel

It is a proved fact that properly made electric steel is far superior to open hearth steel, and that the best makes equal and in certain cases excel crucible steel. Electric tool steels have made their mark and are here to stay. High-speed steels, alloy tool and plain carbon tool steels are being made which compare well with the best crucible grades. Electric alloy die blocks are giving exceptional service and promise to put the cheaper grades off the market. Some automobile manufacturers and makers of automobile parts are specifying electric steel for drive shafts, gears, and in a few cases for drop forgings. This last field is still in its infancy, but there the need for high-grade steel is very urgent. A large number of failures in drop forgings are due to dirty steel and segregations found in the open-hearth forging steels. —Chemical and Metallurgical Engineering.

Economies of Electric Iron and Steel Production in Scandinavia

By Joseph W. Richards

During a tour of Scandinavia this summer I was particularly interested in inspecting electric pig-iron furnaces, in which I have been interested for a great many years, and had the opportunity to see eleven out of the twelve furnaces which are in operation. The first plant visited was at Trollhattan, where the original Jernkontoret furnace of 1912 is still in operation. Mr. E. Nystrom is in charge of the plant. A second has been built alongside of it. Both are being run very steadily and uniformly on a medium-grade iron ore, making a pig-iron which is going into commercial use, using only charcoal as a fuel.

This may be said about the use of the electric furnace as compared with the blast furnace in Sweden: At the present time charcoal is cheaper than coke, and therefore it is cheaper to run with charcoal; the electric pig-iron furnace thus has the advantage of working at its best, under conditions where the blast furnace can hardly compete with it. Pig-iron produced by those furnaces is costing in Sweden about \$5 per ton less than their own blast furnace pig-iron.

I hardly think that any more blast furnaces will be built in Sweden. Possibly a few may be in certain localities, but wherever water power is available for producing electricity, certainly the electric pig-iron furnace can operate more cheaply in Sweden than the blast furnace can.

The next plant visited was at Domnarfvet. They have four furnaces, three of which were in operation. The fourth was idle on account of shortage of water power, it being the dry season. These furnaces show very plainly the successive development of the electric furnace. —Chemical and Metallurgical Engineering.

MARKETS

(From Seattle Post-Intelligencer, May 4, 1919)

There is at present a market on the Pacific Coast, including South and Central America, for more than 2,000,000 tons of pig-iron and finished products, of which 600,000 tons of steel, merchants' bars, small angles, concrete reinforcing bars and plates are used on the Pacific slope of the United States. Col.

David Carnegie said in his address to the Canadian Manufacturers' Association in Toronto, January 28, 1918:

"Canada has increased her steel production from one million tons before the war to 2,500,000 tons. The United States steel production has increased from 32,000,000 to 50,000,000 tons, and Britain's from 7,500,000 tons to 12,000,000 tons."

IRON AND STEEL INDUSTRY FIRST NECESSITY

By Ronald Campbell Campbell-Johnston

"The necessity has imperatively arrived to immediately develop a provincial iron and steel industry within our gates. This has matured more suddenly than otherwise because the United States has, from now on, placed an embargo on its own exports of every kind of pig-iron or steel billets, including their finished products, except permitting the completion of those few contracts already entered into for ship plates and some sundries promised formerly. No other country is able during the war, and for many years after its final collapse, to supply Canada with pig-iron or steel ingots, especially also the heavy manufactured resultants, but rather others are earnestly looking to Canada to supply their urgent needs from her abundant storehouses with unlimited amounts, both of ingots of steel and the finished goods."

MARKET

Immediate local demand, 50 tons per diem.

Future demand for renewals for three transcontinental railways, mining, logging, shipping and railway machinery.

GOVERNMENT ENGINEER

Letter from Wm. M. Brewer, resident engineer:

"I have been authorized by the Honorable the Minister of Mines to carry out the provisions of the act entitled 'The Iron Ore Supply Act,' and shall be obliged if you will kindly inform me how soon you will be ready to receive shipments of magnetite, in what quantities, and what facilities, if any, you have for unloading from scow or steamer."

From a letter received from C. Price Green, Commissioner Canadian National Railways, April 25, 1919:

"We are anxious to have any information on this subject that you feel you are at liberty to communicate. I have given considerable thought to the question of the iron and steel industry at the coast, although the information we have is somewhat nebulous, and perhaps it is only by the establishment of industries such as you propose that this can be brought about."

"I do not know whether you have seen a speech of the Hon. L. C. M. S. Amery, under-secretary of state for the colonies, in which he said: 'Nova Scotia, jutting out into the Atlantic, and British Columbia, overhanging the Pacific, form an incomparable foci for the world's industry and commerce, from the viewpoint of future economic strategy. Canadians have at their back the raw materials and the market of half a continent, and in front their own empire, whence to draw tropical raw materials and find an outlet for their surplus manufactures.'"

From C. Price Green, Commissioner, May 12, 1919:

"I shall be glad to hear from you further, as I feel very interested in this development, which I believe to be one of the most important moves in British Columbia, and the forerunner of big things."

Hon. J. A. Calder, Minister of Immigration, in his address to the Canadian Club, said:

"You have enormous resources in British Columbia but you lack something. There has been something wrong for twenty-five years. I don't know where the trouble lies, but when you come to consider the resources you have and the fact that you have only a population of 350,000 to 400,000, there is something radically wrong, and unless business men and thinking men waken up and take this problem up, goodness knows where you are going to end."

IRON BROUGHT MANY MILLIONS

By M. J. Carrigan, of Seattle Chamber of Commerce, in his speech delivered at the Vancouver Mining Convention:

"Shipbuilding has brought in the past two years \$250,000,000 to the Pacific Coast; a perfect torrent of gold has been thrown at us. Is it to be side-tracked?"

"Now, Hon. Mr. Sloan, your Minister of Mines, states that there is sufficient iron ore right in this province to warrant the construction of a large furnace. Gentlemen, if this convention hit a high spot it was yesterday morning when Mr. Sloan made that admission."

"I know we have the iron ore in this province. I was secretary-treasurer of a company which spent \$80,000 in real money in British Columbia prospecting for iron."

FINEST PIG-IRON IN THE WORLD

"There are ore bodies in this province running so high that the average blast furnace man will not believe they exist. The Irondale furnace produced the finest pig-iron in all the world, except that from one small Swedish furnace, and that was just as good, and that pig-iron was made from your ore."

"The hope of the iron and steel industry and the shipbuilding industry lies in British Columbia."

The finest pig-iron in the world, made by the Vancouver Magnetite Iron & Steel Smelting Company Limited, July 19, 1919, at their experimental plant, Burnaby, B.C., high grade No. 1, was made from the magnetic iron ores of British Columbia, and can be seen in the company's offices at 210-411 Carter Cotton Building.

The iron ore is first run through electrical furnaces at a temperature above 2,780 degrees Fahrenheit, upsetting the magnetite protoxide and reducing it to sponge iron; then it is run into the reducing baths and slowly reduced to the finest No. 1 pig-iron, which will compete against any iron in the world.

As soon as our smelters are in operation and the manufacturers can obtain pig-iron at reasonable price, the same as the iron men in the east, then Vancouver will start to be a manufacturing centre, but not until then.

It is the intention of the company to commence erecting its first unit as soon as possible, turning out pig-iron on a commercial basis.

E. H. GARY, BEFORE THE SENATE COMMITTEE AT WASHINGTON

Mr. Gary states that the net profits of the United States Steel Corporation in recent years are as follows:

1914	\$ 58,267,925
1915	107,832,016
1916	302,449,767
1917	253,608,200
1918	167,562,280

These figures speak for themselves. Iron and steel have made more money for the investor than any other investment. Co-operation will make Vancouver another Pittsburg.

COMPANY'S SITE

The company at the present time is negotiating with several firms for a site near Vancouver. As soon as these preliminary details are completed they will commence the construction of their first unit, to turn out pig-iron commercially for the market.

SOUTHERN CALIFORNIA IRON & STEEL CO.
OPEN HEARTH STEEL FURNACES, STEEL ROLLING MILLS
BOLT, NUT AND RIVET WORKS

Office and Works: 4th and Mateo Streets

A. C. Denman, Jr., Pres. and Gen. Mgr.; E. G. Pratt, Vice-Pres.; S. K. Rindge, Treasurer; A. W. Grier, Secretary; Geo. B. Stephens, Superintendent; G. H. Pettengill, Asst. Supt. and Pur. Agent.

Los Angeles, Cal., September 6, 1919.

Vancouver Magnetite Iron & Steel Smelting Co.,
Vancouver, B.C.

Gentlemen: Last June in one of the Seattle papers we noticed an article stating the fact that you were experimenting with the reduction of iron ore by the use of what is known as the "Fleet" furnace, and that the Government of British Columbia is watching the test and had contributed a certain amount of money for such a purpose.

Being somewhat interested in the reduction of iron ore on the coast, would appreciate a line from you stating whether or not your experiment has proven satisfactory, and if there is any information that you think would be of interest and you would care to divulge to us in this connection, would be very glad to have same.

Hoping to hear from you in the near future in regard to this, we are,

Yours truly,

SOUTHERN CALIFORNIA IRON & STEEL CO.,

By A. C. Denman, Jr.,
President and Gen. Manager.

ACD/B.

VALENTIN ELCORO

FABRICANTES DE TODA CLASE DE CARROS
ARMADURAS METALICAS HERRERIA LAMINACION
TORNILLERIA Y FUNDICION

Mexico, 29 de Noviembre de 1919.

Vancouver Magnetite Iron & Steel Smelting Co. Ltd.,

815 Rogers Building,

Vancouver, B.C., Canada.

Dear Sirs: We wrote you last on the 23th October, and up to this date we have no news from you. We suppose our letter went astray.

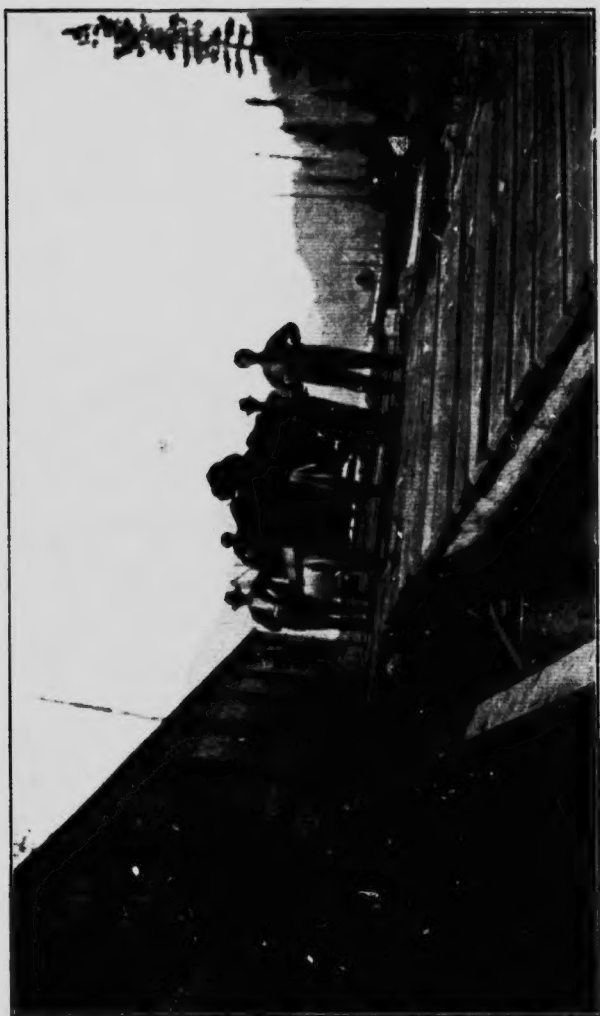
In view of the encouraging news you communicated to us in your favor of the 14th last, we want to trouble you with some more data about the Fleet process. As previously stated, our iron ore contains 4 per cent. sulphur and we want to know whether with this ore we can produce steel ingots of a good quality, the amount of electric current necessary per ton, charcoal, and price of a furnace to produce ten tons of ingots per day.

If you control the Fleet process and it is convenient for the treatment of metals we could combine to exploit it advantageously in this country. We would suggest the installation of a small demonstration plant in this city as a practical way to develop the business. We have the proper place for it and we would take a share of the expenses if your proposition would be convenient for us. As to our standing, we can give you the best of references.

Hoping to hear from you, we remain,

Very truly yours,

(Signed) HYES DE VALENTIN ELCORO.



Bringing the first iron ore to the furnace along the Pacific Great Eastern Railway

125



